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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,776	06/01/2001	Bogdan Kosanovic	TI-32145	3088
23494	7590	02/28/2005	- EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			TANG, KENNETH	
			ART UNIT	PAPER NUMBER
			2127	

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/871,776

Applicant(s)

KOSANOVIC, BOGDAN

Examiner

Kenneth Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-13 are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9-13 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

- a. In claim 9, the term “the amount” (line 20) is indefinite because it is not made explicitly clear in the claim language whether this refers to the “estimated amount” (on line 16) or if this refers to the actual amount needed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertazzi et al. (hereinafter Robertazzi) (US 6,370,560 B1) in view of Maher et al. (hereinafter Maher) (US 6,301,603 B1).**

4. As to claim 1, Robertazzi teaches an apparatus for allocating a processing resources to functions in a queue waiting to be executed (*col. 5, lines 18-22*), comprising:

a capacity determining means for determining an amount of the processor resource available to be assigned (*col. 6, lines 20-24*);

a load determining means for determining an amount of the resource needed for each function waiting in the queue to execute (*col. 3, lines 3-4, col. 6, lines 20-33*);

a prioritization means for prioritizing each of the functions in a queue waiting to be executed (*col. 5, lines 52-58*); and

an allocating means, which receives information from said capacity determining means, said load determining means, and said prioritization means, for allocating the available resource to the functions based on a hierarchical priority scheme (*col. 2, lines 52-62, col. 5, lines 52-58*).

5. As stated before, Robertazzi teaches a load determining means for determining an amount of the resource needed for each function waiting in the queue to execute (*col. 3, lines 3-4, col. 6, lines 20-33*) but fails to explicitly teach that this amount determined is an estimate.

However, it is common knowledge to one of ordinary skill in the art that that amount values could be estimated. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of determining estimated values to the existing system of Robertazzi because this would increase the effectiveness and accuracy of the allocation based on priority. From being able to know the estimated/expected/predicted amount before the allocation occurs, better planning can be performed.

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6. Robertazzi fails to explicitly teach the processor being a signal processor for providing signal processing.

7. However, Maher teaches load balancing and resource allocation involving a digital signal processor (DSP) for dynamic and scalable signal processing (*col. 2, lines 18-23, col. 3, lines 7-20, col. 5, lines 12-22*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of the processor being a signal processor for providing signal processing to the existing load balancing/resource allocation system of Robertazzi because this would permit the system to support more tasks as the need arises (dynamic scalability) (*col. 2, lines 18-23*).

8. As to claim 2, Robertazzi teaches wherein:

the functions are decomposed elements of a more complex process and do not require the same amount of resource to execute (*col. 2, lines 57-60, and col. 1, lines 64-67 through col. 2, lines 1-9*). Maher teaches using a DSP (*see rejection of claim 1*).

9. As to claim 3, Robertazzi fails to explicitly teach wherein multiple instances of any function within the process may be invoked by the processor to execute concurrently. However, it is well known in the art that multiple instances of any function within the process may be invoked by the processor to execute concurrently. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of invoking and concurrently executing multiple instances for functions in order to utilize the benefits of object oriented programming. Maher teaches using a DSP (*see rejection of claim 1*).

10. As to claim 4, Robertazzi teaches wherein:

each of the functions within the process is assigned a separate priority within the hierarchical priority scheme (*col. 2, lines 52-62, col. 5, lines 52-58*). Maher teaches using a DSP (*see rejection of claim 1*).

11. As to claim 5, it is rejected for the same reasons as stated in the rejections of claims 3 and 4.

12. As to claim 6, Robertazzi teaches further comprising:

an assigning means, in communication with said allocation means, for assigning a resource throttling (reducing) value to each function waiting in the queue to be executed, wherein the throttling value determines the reduction of the resource allocated to each of the functions (*col. 9, lines 11-25*). Maher teaches using a DSP (*see rejection of claim 1*).

13. As to claim 7, Robertazzi teaches wherein:

the allocation of the available resource to the functions waiting in the queue is conducted to optimize the amount of the resource assigned to these functions (*col. 5, lines 52-55, col. 9, lines 11-25*). Maher teaches using a DSP (*see rejection of claim 1*).

14. As to claim 8, it is rejected for the same reasons as stated in the rejections of claims 3 and 7.

Response to Arguments

15. Applicant's arguments have been fully considered but are now moot in view of the new grounds of rejections.

16. The Examiner's common knowledge/well-known in the art statement was not traversed and is therefore taken to be admitted prior art (MPEP 2144 .03, Section C).

Allowable Subject Matter

17. Claims 9-13 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The examiner can normally be reached on 8:30AM - 7:00PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kt
7/9/04



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